RESEARCH PROBLEM STATEMENT

Problem Title: Skid Index Trigger Values **No.:**05-02.6

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1. Briefly describe the problem to be addressed:

UDOT currently has in place a guideline for which values of skid index are considered standard, marginal, or deficient. UDOT practice is for Program Development to notify the Regions when skid index values for a section of pavement become deficient, and to advise them to program a corrective treatment, and to post the section as "Slippery When Wet" until such time that a corrective treatment can be applied. Logically, however, some values of skid index present more of a hazard than others. The intent of this problem statement is to develop performance curves for skid index that would help UDOT in programming preventive maintenance treatments.

2. List the research objective(s) to be accomplished:

1. Develop performance curves for skid index that can be used help program preventive maintenance treatments.
2. Produce a report that shows any relationships or trends for skid index on "families" of roadways.
3. Produce a report that explains the relationship between skid index and level of hazard in practical terms.

3. List the major tasks required to accomplish the research objective(s): **Estimated person-hours**

1. Review and summarize UDOT's original research used to establish the existing guideline.
2. Review and summarize measures used in other states to quantify skid resistance, reporting of those measures to interested parties, and trigger values for corrective action. Report on any differences between UDOT's measures and those used in other states.
3. Investigate and report on the relationship between UDOT's skid index and other material properties related to skidding such as the coefficient of friction.
4. Use UDOT accident data and skid data, to investigate statistical relationships between wet weather accidents and various values of skid index. Identify the most clear relationships, with emphasis on distinctions between levels of hazardous condition.
5. Develop performance curves for skid index and identify relationships between "families" of roadways and define how performance curves can be used in programming preventive maintenance treatments.

4. Outline the proposed schedule (when do you need this done, and how we will get there):

5. Indicate type of research and / or development project this is:

Large: [X] Research Project [ ] Development Project
Small: [ ] Research Evaluation [ ] Experimental Feature [ ] New Product Evaluation [ ] Tech Transfer Initiative : [ ] Other_____

6. What type of entity is best suited to perform this project (University, Consultant, UDOT Staff, Other Agency, Other)?

University, in combination with UDOT staff.

7. What deliverable(s) would you like to receive at the end of the project? (e.g. useable technical product, design method, technique, training, workshops, report, manual of practice, policy, procedure, specification, standard, software, hardware, equipment, training tool, etc.)

- Report describing the original research used to establish UDOT's current guideline and practice, describing other states' practices, and describing the meaning of the skid index in both theoretical and practical terms.
- Report describing the current research effort, including data used, analysis methodology, and results and conclusions.
- Performance curves for skid index that UDOT Regions and Districts can use in programming preventive maintenance treatments.

8. Describe how will this project be implemented at UDOT.

Based on the recommendations from the research, UDOT will establish a best practices manual for use by the Regions and Districts outlining the performance curves for skid index and how they may be used in programming preventive maintenance treatments.

9. Describe how UDOT will benefit from the implementation of this project, and who the beneficiaries will be.

UDOT will have a tool to use in planning and programming preventive maintenance treatments bases on expected skid index values.

Traveling public will also benefit from safer roadways.

10. Describe the expected risks, obstacles, and strategies to overcome these.

11. List the key UDOT Champion of this project (person who will help Research steer and lead this project, and will participate in implementation of the results): Bill Lawrence

12. Estimate the cost of this research study including implementation effort (use person-hours from No. 3):

13. List other champions (UDOT and non-UDOT) who are interested in and willing to participate in the Technical Advisory Committee for this study:

Name	Organization/Division/Region	Phone	Attended UTRAC?
A) Bill Lawrence	UDOT Program Development	965-4158	
A) Lloyd Neeley	UDOT Central Maintenance	965-4789	Yes
B) Gary Kuhl	UDOT Program Development	964-4552	
C) Nathan Lee	UDOT Region 1	(801)620-1606	
D) Doug Anderson	UDOT Research	965-4377	
E) Russ Scovil	UDOT Program Development	965-4097	
F)			

14. Identify other Utah agencies, regional or national agencies, or other groups that may have an interest in supporting this study:

FHWA, UDOT Traffic and Safety, UDOT Risk Management